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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/600,519

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Kevin J. Murphy

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04/27/2009

INTEL/BSTZ

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EXAMINER

SHAND, ROBERTA A

ART UNIT

PAPER NUMBER

2416

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/600,519	<b>Applicant(s)</b> MURPHY ET AL.	
	<b>Examiner</b> Roberta A. Shand	<b>Art Unit</b> 2416	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-7,9-14,16-18,20-27 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,9-14,16-18,20-27, 31 and 32 is/are rejected.
- 7) ☒ Claim(s) 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 2416

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 9, 12-14, 20, 23-26, 27 and 32 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lind (U.S. 2004/0244043 A1) in view of Kinemura (U.S. 6931659 B1) and further in view of Carlson (U.S. 2006/0120282 A1).

3. Regarding claims 1, 12 and 23, Lind teaches a method, comprising: calculating, by a device that shares one or more upstream channels with other devices, an available bandwidth of a first upstream channel based at least on upstream channel bandwidth data transmitted from a remote system (fig. 11A and paragraph 148);

4. While Lind teaches increasing the traffic rate (paragraph 15). Lind does not explicitly teach determining, by the device whether based, at least in part on particular data, an upstream channel data transfer rate can be improved over a current data transfer rate of the first upstream channel from the device to a remote system and improving by the device, if the upstream channel data transfer rate can be improved, the upstream channel data transfer rate based, at least in part, on the particular data.

5. Kinemura teaches (fig. 4) determining, by the device whether based, at least in part on particular data, an upstream channel data transfer rate can be improved over a current data transfer rate of the first upstream channel from the device to a remote system (S6) and improving

Art Unit: 2416

by the device, if the upstream channel data transfer rate can be improved, the upstream channel data transfer rate based, at least in part, on the particular data (S7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lind to include Kinemura's transfer rate adjustment to provide quality transmission.

6. Lind and Kinemura do not teach the particular data comprise the device's transmit queue capacity data, the upstream channel bandwidth data transmitted from the remote system, or both;

7. Carlson teaches (fig. 28) the particular data comprise the device's transmit queue capacity data, the upstream channel bandwidth data transmitted from the remote system, or both (paragraphs 187-190). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lind and Kinemura's invention to include Carlson device to transmit queue capacity data in order to guarantee data flow.

8. Regarding claims 2, 13 and 24, Lind teaches (fig. 1) the device that shares the upstream channel with other devices comprises a cable modem.

9. Regarding claims 3, 14 and 25, Lind teaches (fig. 1) the remote system comprises a cable modem termination system (CMTS).

10. Regarding claims 9 and 20, Lind teaches (abstract) the bandwidth data comprises an upstream channel descriptor (UCD) message and an upstream bandwidth allocation map (MAP) message.

Art Unit: 2416

11. Regarding claim 26, Lind teaches (fig. 1) a system, comprising: a cable modem termination system, to transmit and receive data packets; customer premise equipment (paragraph 119), to receive the data packets from the CMTS and transmit the data packets to the CMTS; a cable modem, coupled with the CMTS and the CPE (paragraph 119); and a coaxial cable, to couple the cable modem with the CMTS and transmit the data packets between the cable modem and the CMTS (paragraph 54).

12. While Lind teaches increasing the traffic rate (paragraph 15). Lind does not explicitly teach determining, by the device whether based, at least in part on particular data, an upstream channel data transfer rate can be improved over a current data transfer rate of the first upstream channel from the device to a remote system and improving by the device, if the upstream channel data transfer rate can be improved, the upstream channel data transfer rate based, at least in part, on the particular data.

13. Kinemura teaches (fig. 4) determining, by the device whether based, at least in part on particular data, an upstream channel data transfer rate can be improved over a current data transfer rate of the first upstream channel from the device to a remote system (S6) and improving by the device, if the upstream channel data transfer rate can be improved, the upstream channel data transfer rate based, at least in part, on the particular data (S7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lind to include Kinemura's transfer rate adjustment to provide quality transmission.

14. Lind and Kinemura do not teach the particular data comprise the device's transmit queue capacity data, the upstream channel bandwidth data transmitted from the remote system, or both;

Art Unit: 2416

15. Carlson teaches (fig. 28) the particular data comprise the device's transmit queue capacity data, the upstream channel bandwidth data transmitted from the remote system, or both (paragraphs 187-190). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lind and Kinemura's invention to include Carlson device to transmit queue capacity data in order to guarantee data flow.

16. Regarding claim 27, Lind teaches (paragraph 119) the cable modem is integrated with the CPE.

17. Regarding claim 32, as for performing by the cable modem operations of calculating empty time-slots of each upstream channel of the one or more upstream channels; and calculating an available bandwidth of each upstream channel based at least in part on the numbers of empty time-slots, it is inherent in Lind's system that the number of empty slots is calculated in order to schedule upstream grants.

18. Claims 5-7 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lind in view of Kinemura further in view of Carlson and yet further in view of Lansing (U.S. 2003/0058795 A1).

19. Regarding claims 5 and 16, Lind, Kinemura and Carlson teach all of the limitations of claim 1.

Art Unit: 2416

20. While Lind teaches a transmit queue. Lind, Kinemura and Carlson do not teach determining whether the transmit queue capacity data indicates that the transmit queue is full.

21. Lind teaches (paragraph 43) determining whether the transmit queue capacity data indicates that the transmit queue is full. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lind, Kinemura and Carlson to include Lansing's determining whether the transmit queue capacity data indicates that the transmit queue is full to reduce congestion within the system.

22. Regarding claims 6 and 17, Lansing teaches (paragraph 43) if the transmit queue capacity data indicates that the transmit queue is full: determining whether a capacity of the transmit queue is at a maximum capacity; and increasing the capacity of the transmit queue, if the capacity is not at the maximum capacity (paragraph 39).

23. Regarding claims 7 and 18, Lansing teaches (paragraph 43) if the transmit queue capacity data indicates that the transmit queue is full: determining whether a capacity of the transmit queue is at a maximum capacity; and initiating a service flow, if the capacity of the transmit queue is at the maximum capacity (paragraph 39).

24. Claims 10, 11, 21, 22 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lind in view of Kinemura further in view of Carlson and yet further in view of Kolze (U.S.2003/0177502 A1).

Art Unit: 2416

25. Regarding claims 10, 11, 21, 22 and 31, as mentioned above, Lind, Kinemura and Carlson teach all of the limitations of claim 9.

26. Lind teaches (fig. 11) performing by the cable modem, operations of receiving the UCD message from the CMTS for each upstream channel, including the current first upstream channel the cable modem is using (paragraph 148); receiving the MAP message from the CMTS for each upstream channel; calculating an available bandwidth of each upstream channel based, at least in part, on the UCD message and the MAP message (paragraph 149).

27. Lind, Kinemura and Carlson do not teach determining whether a different upstream channel has more bandwidth than the current first upstream channel and switching to the different upstream channel.

28. Kolze teaches (paragraph 15) determining whether a different upstream channel has more bandwidth than the current first upstream channel and switching to the different upstream channel. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made modify Lind, Kinemura and Carlson's system to include Kolze's channel switching to allow great channel flexibility.

***Allowable Subject Matter***

29. Claim 30 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



Art Unit: 2416

***Response to Arguments***

30. Applicant's arguments with respect to claims 1-3, 5-7, 9-14, 16-18, 20-27 and 30-32 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberta A. Shand whose telephone number is 571-272-3161.

The examiner can normally be reached on M-F 9:00am-5:30pm.

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Roberta A. Shand  
/R. A. S./  
Examiner, Art Unit 2416

Application/Control Number: 10/600,519

Page 9

Art Unit: 2416

/William Trost/

Supervisory Patent Examiner, Art Unit 2416